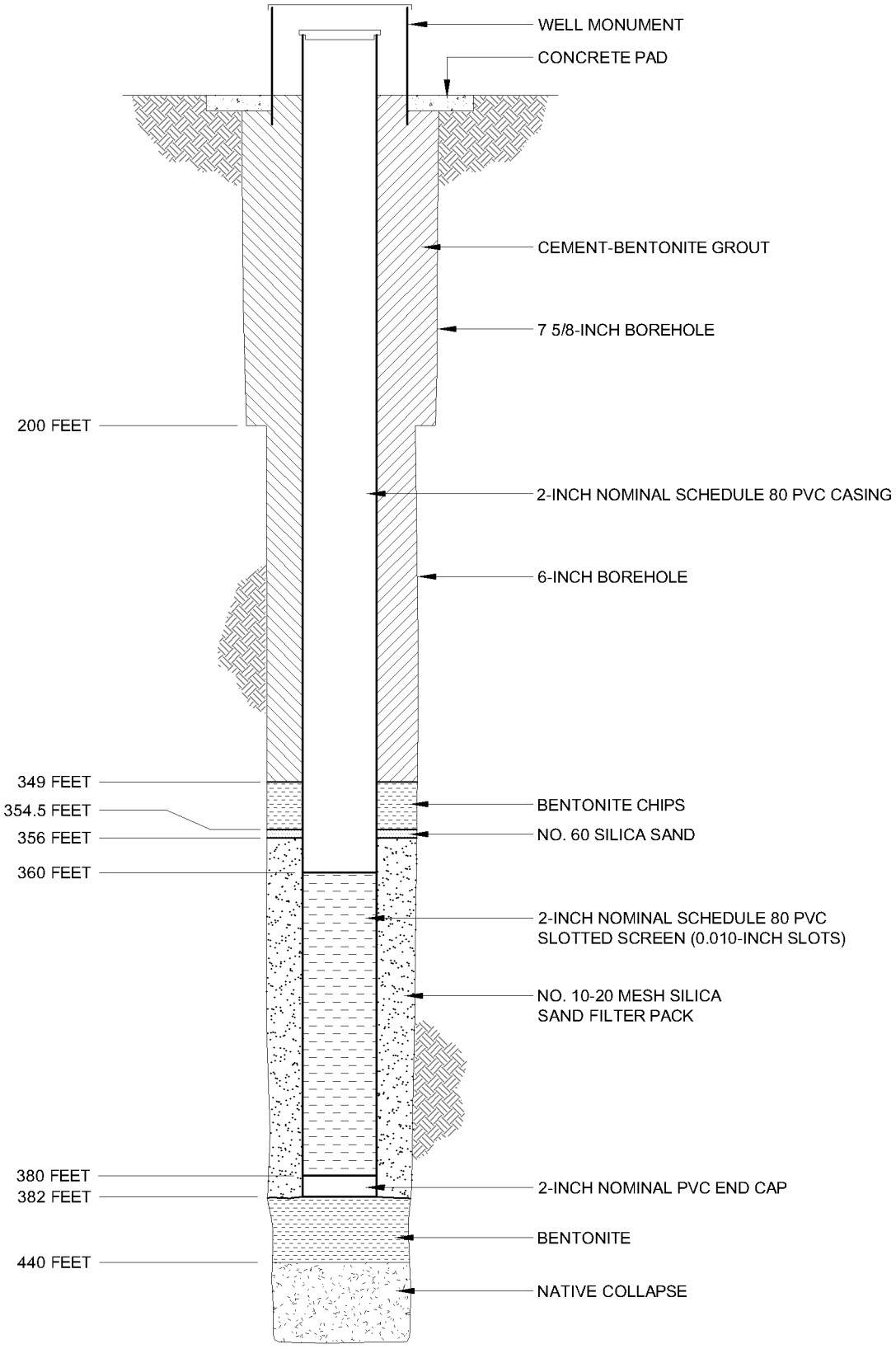

NOT TO SCALE

BROWN AND CALDWELL	Date: March 2008 Atlantic Richfield Company Project: 134557		**Well B/W-29D Construction Details**

Brown and Caldwell

Carson City, Nevada

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D **Sheet** 1 **of** 26

Boring Location: On Sulfide Tailings in Mine Site		**Northing:** 1554434.5	**Easting:** 326924.6
Drilling Contractor: Boart Longyear	**Driller:** R. Salois	**Top of PVC Elevation:** 4412.84 feet amsl **Ground Surface Elevation:** 4409.9 feet amsl	
Drilling Equipment: GP24-300RS	**Borehole Diameter:** 8-inches to 6-inches	**Date Started:** 8/9/07	**Date Finished:** 9/24/07
Drilling Method: Sonic	**Drilling Fluid:** Water	**Completed Depth:** 490 fbgs	**Water Depth:** fbmp
Sampling Method: Core Barrel		WELL CONSTRUCTION	
Well Seal: Bentonite and Cement		**Type and Diameter of Well Casing:** 2-inch Schedule 80 PVC	
Logged By: P. Spillers, R. Banda, and C. Strauss		**Slot Size:** 0.010 inch	**Filter Material:** #10-20 Silica Sand

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
			Sulfide Tailings (0 - 3) Dry, loose, no odor. Primarily medium to fine sand with ~25% gravel to 15 mm and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					Description of drilled cuttings based on ASTM Method D-2488 (the visual-manual procedure), grain-size determinations and nomenclature based on the Unified Soil Classification System.
			Sulfide Tailings (3 - 5.5) Dry, loose, no odor. Primarily medium to fine sand with ~10% silt and clay. The sand is subround. The fines are nonplastic, have a yellowish brown color, and do not react to HCl.					Horizontal Survey data is expressed in the Nevada State Plane system, Nevada West zone, in feet.
5	4405							Sharp contacts indicated by solid lines, gradational contacts indicated by dashed line.
			Sulfide Tailings (5.5 - 49.5) Dry, loose, no odor. Primarily medium to fine sand with ~10% silt and clay. The sand is subround. The fines are nonplastic, have a light grey color, and do not react to HCl. There are silty sand laminations throughout zone.					All depths are below land surface unless stated otherwise.
								WELL DESIGN for B/W-29D: PVC Stickup: 2.94 feet. Cement - Bentonite Grout: 0-349 feet Bentonite Chips: 349-354.5 feet No. 60 Silica Sand: 354.5-356 feet #10-20 Silica Sand Filter Pack: 356-382 feet 2-inch Nominal Schedule 80 PVC 0.010 Slotted Screen: 360-380 feet Native Collapse: 440-490 feet Additional Bentonite Fill: 382-440 feet
10	4400							Number of wells at this location: 4 Screen intervals for paired wells are labeled at the installed depths.
	4395							

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
20	4390							
25	4385							
30	4380							

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
35	4375							
40	4370							
45	4365							
50	4360	CH	**Fat Clay (49.5 - 52)** Moist, soft, no odor. Primarily silt and clay with no sand or gravel. Zone is the clay liner for the sulfide tailings. Has an olive gray to gray mottled color. Reacts strongly to HCl.					
		CL	**Lean Clay (52 - 56)** Moist, very soft, no odor. Primarily silt and clay with no sand or gravel. Zone is the clay liner for the sulfide					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
			tailings. Has a gray color. Reacts strongly to HCl.					
55	4355							
		CH	**High Plasticity Clay (56 - 56.5)** Dry to moist, firm, no odor. Primarily silt and clay with no sand or gravel. Zone is the clay liner for the sulfide tailings. Has a brown color and does not react to HCl.					
		SC	**Clayey Sand (56.5 - 58)** Dry to moist, medium dense, no odor. Primarily medium to fine sand with ~5% gravel to 7 mm and ~40% silt and clay. The gravel is subangular to subrounded and the sand is subrounded to rounded. The fines are nonplastic, have a brown color, and do not react to HCl.					
			No Recovery (58 - 60)					
60	4350	SM	**Silty Sand (60 - 61.5)** Dry to moist, medium dense, no odor. Primarily medium to fine sand with ~10% gravel to 10 mm and ~30% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
		SM	**Silty Sand (61.5 - 64)** Moist, medium dense, no odor. Primarily medium to fine sand with no gravel and ~50% silt and clay. The sand is angular to subangular. The fines are nonplastic, and do not react to HCl.					
65	4345	CH	**Fat Clay (64 - 66)** Dry to moist, dense, no odor. Primarily silt and clay with no sand or gravel. The fines have moderate to high plasticity, are moderately tough, have a dark grey color, and do not react to HCl.					
		SM	**Silty Sand (66 - 67)** Moist to saturated, medium dense, no odor. Primarily medium to fine sand with ~5% coarse sand to 2 mm and ~40% silt and clay. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
		SP	**Poorly Graded Sand (67 - 68)** Saturated, loose, no odor. Primarily medium to fine sand with no gravel and ~10% silt and clay. The sand is subrounded to rounded. The fines are nonplastic, have a brown color, and do not react to HCl.					
		ML	**Sandy Silt (68 - 70)** Moist to saturated, firm, no odor. Primarily silt and clay with no gravel and ~15% fine grained sand. The fines are nonplastic, and do not react to HCl. There is a 4-inch seam of saturated sand at 69 feet.					
70	4340	SW	**Well-Graded Sand (70 - 83.5)** Saturated, loose, no odor. Primarily coarse sand with ~5% gravel to 7 mm and trace silt and clay. The sand and gravel are subangular to subrounded. The fines					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
			are nonplastic, and do not react to HCl.					
75	4335			B/W-29@73-78				
80	4330							
85	4325	SM	**Silty Sand (83.5 - 85.5)** Saturated, medium dense, no odor. Primarily coarse sand with a maximum grain size of 3 mm and ~15% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SM	**Silty Sand (85.5 - 88)** Moist to saturated, medium dense, no odor. Primarily medium to fine sand with ~30% silt and clay. There is no reaction to HCl.					
		CL	**Sandy Lean Clay (88 - 89.5)** Moist, dense, no odor. Primarily silt and clay with ~40% medium to fine grained sand. The sand is subrounded to rounded. The fines have medium plasticity and toughness, have a dark brown color, and do not react to HCl.					
90	4320	SM	**Silty Sand (89.5 - 92.5)** Saturated, loose, no odor. Primarily medium to fine sand with ~10% coarse sand and ~20% silt and clay. The sand is subrounded to rounded. The fines are					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
			nonplastic, and do not react to HCl.					
		CL	**Sandy Lean Clay (92.5 - 96.5)** Moist, dense, no odor. Primarily silt and clay with ~40% medium to fine grained sand. The sand is subrounded to rounded. The fines have medium plasticity and toughness, have a dark brown color, and do not react to HCl.					
95	4315							B/W-29S screened from 95 to 115 feet.
		CH	**Fat Clay (96.5 - 97.5)** Dry to moist, dense, no odor. Primarily silt and clay with ~5% fine grained sand. The fines have moderate to high plasticity, are moderately tough, and do not react to HCl.					
		CL						
		SP	**Sandy Lean Clay (97.5 - 98)** Dry to moist, dense, no odor. Primarily silt and clay with ~40% medium to fine grained sand. The sand is subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.	B/W-29@98-103				
100	4310		**Poorly Graded Sand (98 - 103.5)** Saturated, loose, no odor. Primarily medium to fine sand with no gravel and ~10% silt and clay. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
		SM	**Silty Sand with Gravel (103.5 - 105)** Moist to saturated, dense, no odor. Primarily medium to fine sand with ~10% gravel to 7 mm and ~40% silt and clay. The sand and gravel are subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
105	4305	SM	**Silty Sand (105 - 106)** Moist to saturated, medium dense, no odor. Primarily medium to fine sand with ~20% gravel to 10 mm and ~30% silt and clay. The gravel is subangular to subrounded and the sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
		ML	**Sandy Silt (106 - 112)** Moist to saturated, dense, no odor. Primarily silt and clay with ~30% fine grained sand. The fines are nonplastic, and do not react to HCl.					
110	4300							

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
		SM	**Silty Sand (112 - 114)** Moist to saturated, medium dense, no odor. Primarily medium to fine sand with ~10% coarse sand to 5 mm and ~20% silt and clay. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
		CL	**Sandy Lean Clay (114 - 115)** Dry to moist, very dense, no odor. Primarily silt and clay with ~10% gravel to 10 mm and ~20% coarse grained sand. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
115	4295	CH	**Fat Clay (115 - 118.5)** Dry to moist, very dense, no odor. Primarily silt and clay with no gravel and trace fine grained sand. The fines have moderate to high plasticity, are very tough, and do not react to HCl.					
		SM	**Silty Sand (118.5 - 123.5)** Saturated, loose, no odor. Primarily fine sand with ~30% silt and clay. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
120	4290							B/W-29I1 screened from 122 to 132 feet.
		SP	**Poorly Graded Sand with Gravel (123.5 - 125)** Saturated, dense, no odor. Primarily coarse sand with~15% gravel to 7mm and ~10% silt and clay . The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.	B/W-29@124-129				
125	4285	SM	**Silty Sand (125 - 128.5)** Saturated, dense, no odor. Primarily coarse sand with ~5% gravel to 7mm, ~35% medium to fine grain sand and 20% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SM	**Silty Sand (128.5 - 130)** Saturated, dense, no odor. Primarily medium to fine					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
130	4280	SM	sand with ~5% gravel to 5 mm and 20% silt and clay. The gravel is subangular to subrounded and the sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
			Silty Sand (130 - 135) Moist to saturated, dense, no odor. Primarily fine sand with ~40% silt and clay. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl. There is a four-inch saturated medium grained sand seam at 132.5 feet bgs.					
135	4275	SW	**Well-Graded Sand (135 - 136.5)** Saturated, loose, no odor. Primarily medium to fine sand with ~10% gravel to 10 mm and ~15% silt and clay. The gravel is subrounded and the sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
		SM	**Silty Sand (136.5 - 137.5)** Moist to saturated, loose, no odor. Primarily fine sand with~40% silt and clay. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
		SW	**Well-Graded Sand (137.5 - 138.5)** Saturated, dense, no odor. Primarily medium to fine sand with ~10% gravel to 10 mm and ~15% silt and clay. The gravel is subangular to subrounded and the sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
140	4270	SM	**Silty Sand (138.5 - 140)** Saturated, loose, no odor. Primarily fine sand with ~40% silt and clay. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
		CL	**Lean Clay (140 - 143.5)** Moist, firm, no odor. Primarily silt and clay with trace sand and gravel. The fines have moderate to high plasticity, are moderately tough, and do not react to HCl.					
		ML	**Sandy Silt (143.5 - 144.5)** Moist to saturated, soft, no odor. Primarily silt and clay with ~30% medium to fine grain sand with a maximum grain size of 3 mm. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
145	4265	CH	**Fat Clay (144.5 - 145.5)** Dry to moist, dense, no odor. Primarily silt and clay with trace sand and gravel. The fines have moderate to high plasticity, are very tough, and do not react to HCl.					
		SP	**Poorly Graded Sand (145.5 - 149)** Saturated, loose, no odor. Primarily fine sand with ~15% silt and clay. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D **Sheet** 9 **of** 26

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
150	4260	SC	**Clayey Sand (149 - 150)** Moist, dense, no odor. Primarily medium to fine sand with ~50% silt and clay. The fines are nonplastic, and do not react to HCl.					
		ML	**Silt (150 - 155)** Saturated, dense, no odor. Primarily silt and clay with ~5% gravel to 7 mm. The gravel is subangular. The fines are nonplastic, and do not react to HCl. There is a saturated orangish brown sand seam throughout the section.					
155	4255	SW	**Well-Graded Sand (155 - 160.5)** Saturated, dense, no odor. Primarily medium to fine sand with ~5% gravel to 7 mm and 10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.	B/W-29@155-160				
160	4250	SM	**Silty Sand (160.5 - 165)** Moist to saturated, dense, no odor. Primarily fine sand with ~ 40% silt and clay. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
165	4245	SP	**Poorly Graded Sand (165 - 169)** Saturated, dense, no odor. Primarily medium to fine sand with ~10% silt and clay. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl. There are silt laminations from 166-169 feet.					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
		MLS	**Sandy Silt (169 - 172.5)** Moist to saturated, dense, no odor. Primarily silt and clay with ~30% fine grained sand. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
170	4240							
		SM	**Silty Sand (172.5 - 173.5)** Moist to saturated, dense, no odor. Primarily medium to fine sand with ~30% coarse sand and ~20% silt and clay. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.	B/W-29@172-177				
		SP	**Poorly Graded Sand (173.5 - 176.5)** Saturated, loose, no odor. Primarily medium to fine sand with ~10% silt and clay The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
175	4235							
		SM	**Silty Sand (176.5 - 178.5)** Moist to saturated, dense, no odor. Primarily medium to fine sand with ~5% gravel to 7mm and ~20% silt and clay. The gravel is subrounded and the sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
		MLS	**Sandy Silt (178.5 - 182)** Moist, dense, no odor. Primarily silt and clay with ~30% fine grained sand. The sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
180	4230							
		SM	**Silty Sand (182 - 184.5)** Moist to saturated, dense, no odor. Primarily medium to fine sand with ~10% gravel and ~15% silt and clay. The sand and gravel are subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
		SM	**Silty Sand (184.5 - 185)** Moist to saturated, medium dense, no odor. Primarily fine sand with ~40% silt and clay. The fines are nonplastic, and do not react to HCl.					B/W-29I2 screened from 185 to 195 feet.
185	4225	SM	**Silty Sand (185 - 188.5)** Saturated, dense, no odor. Primarily coarse to fine					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
			sand with ~5% gravel to 7 mm and ~20% silt and clay. The gravel is subrounded and the sand is subrounded to rounded. The fines are nonplastic, and do not react to HCl.					
		SM	**Silty Sand (188.5 - 189.5)** Moist to saturated, with medium density. no odor. Primarily medium to fine sand with ~ 5% gravel to 7 mm, ~15% coarse grain sand and ~ 30% silt and clay.The gravel is subangular to subround and the sand is subangular to subround to round. The fines are nonplastic, and do not react to HCl.					
190	4220	SW	**Well-Graded Sand with Gravel (189.5 - 191)** Saturated, loose, no odor. Primarily medium to fine sand with ~15% gravel to 7 mm and ~15% silt and clay. The gravel is subangular to subounded and the sand is angular to subangular to subrounded. The fines are nonplastic, and do not react to HCl.	B/W-29@190-195				
		CL-ML	**Silty Clay (191 - 193.5)** Dry to moist, dense, no odor. Primarily silt and clay with no gravel and trace fine grained sand. The fines have low to medium plasticity and toughness, and do not react to HCl.					
		SM	**Silty Sand (193.5 - 195)** Saturated, dense, no odor. Primarily fine sand with no gravel and ~30% silt and clay. The fines are nonplastic, and do not react to HCl.					
195	4215	SW	**Well-Graded Sand with Gravel (195 - 207)** Saturated, medium dense, no odor. Primarily medium to fine sand with ~15% gravel to 10 mm and ~20% silt and clay. The gravel is angular to subangular and the sand is angular to subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
200	4210							
205	4205							

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
		SC	**Clayey Sand (207 - 208.5)** Moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 10 mm and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
		SW	**Well-Graded Sand (208.5 - 213)** Moist, dense, no odor. Primarily medium to fine sand with ~5% gravel to 15 mm and ~25% silt and clay. The sand and gravel are subangular to subrounded. The fines have low plasticity and toughness, and do not react to HCl.					
210	4200							
		SC	**Clayey Sand (213 - 214)** Moist, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 15 mm and ~30% silt and clay. The gravel is angular to subangular and the sand is subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and have no reaction to a weak reaction to HCl.					
		SM	**Silty Sand (214 - 217.5)** Moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 10 mm and ~35% silty clay. The sand and gravel are subangular to subrounded. The fines have medium plasticity and toughness, and do not react to HCl.					
215	4195							
		SM	**Silty Sand (217.5 - 220)** Moist, dense, no odor. Primarily medium to fine sand with ~10% gravel to 10 mm and ~15% silt and clay. The gravel is subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
220	4190							
		CL	**Clayey Sand (220 - 222.5)** Moist, very dense, no odor. Primarily medium to fine sand with ~5% coarse grain sand to 2mm and ~40% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.	B/W-29@220-225				
		SW-SM	**Well-Graded Sand (222.5 - 225)** Moist to saturated, dense, no odor. Primarily medium to fine sand with ~5% coarse grain sand to 5mm and ~20% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
225	4185	SM	**Silty Sand (225 - 230)** Moist, very dense, no odor. Primarily medium to fine sand with ~5% coarse grain sand to 0.5 mm and ~45% silt and clay. The sand is subangular to subrounded. The fines have low plasticity and toughness, and do not react to HCl.					
230	4180	SW	**Well-Graded Sand (230 - 232.5)** Moist to saturated, dense, no odor. Primarily medium to fine sand with a maximum grain size of 2 mm and ~15% silt and clay The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SM	**Silty Sand (232.5 - 235)** Moist, very dense, no odor. Primarily medium to fine sand with a maximum grain size of 3 mm and ~25% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
235	4175	SC	**Clayey Sand (235 - 240)** Moist, very dense, no odor. Primarily medium to fine sand with no gravel and ~40% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
240	4170	SM	**Silty Sand (240 - 246)** Moist, very dense, no odor. Primarily medium to fine sand with a maximum grain size of 2 mm and ~35% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
245	4165							
		SP-SM	**Poorly Graded Sand with Silt (246 - 248.5)** Saturated, dense, no odor. Primarily medium to fine sand with a maximum grain size of 1 mm and ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SM	**Silty Sand (248.5 - 251)** Moist, very dense, no odor. Primarily medium to fine sand with ~5% coarse grain sand to 3mm and ~35% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl. Section has silty lenses present.					
250	4160			B/W-29@250-255				
		SP-SM	**Poorly Graded Sand with Silt (251 - 253.5)** Saturated, dense, no odor. Primarily medium to fine sand with with a maximum grain size of 1 mm and ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SM	**Silty Sand (253.5 - 261)** Moist, very dense, no odor. Primarily medium to fine sand with a maximum grain size of 1 mm and ~30% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
255	4155							
260	4150							
		SW	**Well-Graded Sand (261 - 267.5)** Saturated, dense, no odor. Primarily medium to fine sand with ~15% coarse grain sand to 4mm and ~10% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D **Sheet** 15 **of** 26

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
265	4145			B/W-29@260-265				
		SC	**Clayey Sand (267.5 - 271.5)** Moist, very dense, no odor. Primarily medium to fine sand with a maximum grain size of 0.5 mm and ~35% silt and clay.The sand is subangular. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
270	4140							
		SM	**Silty Sand (271.5 - 279)** Moist to saturated, dense, no odor. Primarily medium to fine sand with ~10% gravel to 10 mm and ~20% silt and clay. The gravel is angular to subangular and the sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl. At 273.5 feet there is a fine sand lense.					
275	4135							
		SM	**Silty Sand (279 - 282)** Moist, dense, no odor. Primarily medium to fine sand with ~5% gravel to 10 mm and ~20% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
280	4130							

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
		SC	**Clayey Sand (282 - 285.5)** Dry to moist, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 20 mm and ~25% silt and clay. The sand and gravel are angular to subangular. The fines are nonplastic, and do not react to HCl.					
285	4125	SC	**Clayey Sand (285.5 - 287)** Moist, very dense, no odor. Primarily fine sand with ~45% silt and clay. The sand is subangular to subrounded. The fines have low to medium plasticity and toughness, and do not react to HCl.	B/W-29@286-291				
		SW	**Well-Graded Sand (287 - 292.5)** Moist to saturated, dense, no odor. Primarily medium to fine sand with ~10% gravel to 15 mm and ~15% silt and clay. The gravel is angular to subangular and the sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
290	4120							
		SP-SM	**Poorly Graded Sand with Silt (292.5 - 302.5)** Moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 5 mm and ~20% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl. Zone gets finer as it nears 300 feet.					
295	4115							
300	4110							

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
		SC	**Clayey Sand (302.5 - 306)** Dry to moist, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 10 mm and ~25% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
305	4105							
		SM	**Silty Sand (306 - 310)** Moist to saturated, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 15 mm and ~25% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.	B/W-29@307-312				
310	4100							
		SW	**Well-Graded Sand (310 - 311.5)** Saturated, dense, no odor. Primarily medium to fine sand with ~5% gravel to 10 mm and ~10% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SM	**Silty Sand (311.5 - 313)** Moist, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 20 mm and ~25% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SC	**Clayey Sand (313 - 320)** Dry to moist, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 20 mm and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
315	4095							

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
320	4090	SM	**Silty Sand (320 - 323)** Dry to moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 10 mm and ~25% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.	B/W-29@321-372				
		SW-SM	**Well-Graded Sand with Silt (323 - 325.5)** Moist to saturated, dense, no odor. Primarily medium to fine sand with ~5% gravel to 25 mm and ~15% silt and clay. The gravel is angular to subangular and the sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
325	4085	SM	**Silty Sand (325.5 - 328)** Dry to moist, very dense, no odor. Primarily medium to fine sand with a maximum grain size of 0.5 mm and ~35% silt and clay. The sand is subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
		SM	**Silty Sand (328 - 331)** Moist to saturated, dense, no odor. Primarily medium to fine sand with ~10% gravel to 50 mm and ~15% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
330	4080	SC	**Clayey Sand (331 - 332)** Dry to moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 20 mm and ~25% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
		SM	**Silty Sand (332 - 334)** Moist, dense, no odor. Primarily medium to fine sand with ~10% gravel to 10 mm and ~20% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
335	4075		**(334 - 340)** No Recovery					

BORING LOG

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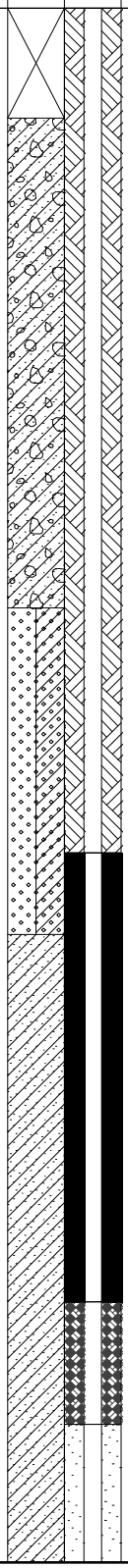
Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
340	4070	SC	**Clayey Sand with Gravel (340 - 346)** Dry to moist, very dense, no odor. Primarily medium to fine sand with ~15% gravel to 50 mm and ~30% silt and clay. The gravel is angular to subangular and the sand is subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
345	4065	SW-SC	**Well-Graded Sand with Clay (346 - 350)** Dry to moist, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 25 mm and ~25% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
350	4060	SC	**Clayey Sand (350 - 358)** Dry to moist, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 50 mm and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
355	4055							



BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
360	4050	SM	**Silty Sand (358 - 365.5)** Moist, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 5 mm and ~25% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					B/W-29D screened from 360 to 380 feet.
365	4045	SP	**Poorly Graded Sand (365.5 - 366.5)** Moist to saturated, dense, no odor. Primarily medium to fine sand with no gravel and ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.	B/W-29@367-372				
		SM	**Silty Sand with Gravel (366.5 - 368)** Dry, very dense, no odor. Primarily medium to fine sand with ~15% gravel to 70 mm and ~20% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl. Starting to see some weathered granites, probably from alluvial activity.					
370	4040	SP	**Poorly Graded Sand (368 - 371)** Moist to saturated, dense, no odor. Primarily medium to fine sand with no gravel and ~20% silt and clay. The sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SC	**Clayey Sand with Gravel (371 - 376)** Dry, very dense, no odor. Primarily medium to fine sand with ~20% gravel to 100 mm and ~35% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
375	4035	SC	**Clayey Sand (376 - 383.5)** Dry to moist, very dense, no odor. Primarily medium					

BORING LOG

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Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
			to fine sand with ~10% gravel to 50 mm and ~30% silt and clay. The gravel is angular to subangular and the sand is angular to subangular to subrounded. The fines are nonplastic, have a reddish brown color, and do not react to HCl. The zone becomes dry at 381 feet.					
380	4030							
		SC	**Clayey Sand (383.5 - 385)** Moist, dense, no odor. Primarily medium to fine sand with ~5% gravel and ~30% silt and clay. The sand and gravel are subangular. The fines are nonplastic, and do not react to HCl.					
385	4025							
		SC	**Clayey Sand with Gravel (385 - 392)** Dry, very dense, no odor. Primarily coarse to fine sand with ~15% gravel to 10 mm and ~30% silt and clay. The gravel is angular to subangular and the sand is angular to subangular to subrounded. The fines are nonplastic, have an orange brown color, and do not react to HCl.					
390	4020							
		CL	**Lean Clay with Sand and Gravel (392 - 397.5)** Dry to moist, very dense, no odor. Primarily silt and clay with ~20% gravel to 10 mm and ~20% coarse to fine grain sand. The gravel is angular to subangular and the sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
395	4015							

BORING LOG

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Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
		SC	**Clayey Sand with Gravel (397.5 - 402)** Moist, very dense, no odor. Primarily silt and clay with ~20% medium to fine sand and ~25% gravel to 10 mm. The gravel is angular to subangular and the sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
400	4010							
		SC	**Clayey Sand with Gravel (402 - 410)** Dry, very dense, no odor. Primarily medium to fine sand with ~20% gravel to 50 mm and ~25% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl. Zone has large clasts from alluvial fan.					
405	4005							
410	4000	SC	**Clayey Sand with Gravel (410 - 412.5)** Moist, very dense, no odor. Primarily medium to fine sand with ~15% gravel to 20 mm and ~25% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
		SC	**Clayey Sand (412.5 - 415)** Dry to moist, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 15 mm and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					

BORING LOG

Project Name: Yerington Second Step Hydrogeologic Framework Assessment **Project Number:** 132025

Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
415	3995	SC	**Clayey Sand with Gravel (415 - 418)** Dry, very dense, no odor. Primarily medium to fine sand with ~25% gravel to 50 mm and ~25% silt and clay. The gravel is angular to subangular and the sand is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SC	**Clayey Sand (418 - 424)** Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 20 mm and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
420	3990							
		CL	**Sandy Lean Clay (424 - 425)** Dry, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 10 mm and ~40% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
425	3985	SC	**Clayey Sand (425 - 428)** Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 70 mm and ~30% silt and clay.The gravel is angular to subangular. The fines are nonplastic, and do not react to HCl.					
		CL	**Sandy Lean Clay (428 - 429)** Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 70 mm and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
430	3980		**(429 - 440)** No Recovery					

BORING LOG

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Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
435	3975							
440	3970	GC	**Clayey Gravel (440 - 450)** Dry, very dense, no odor. Primarily gravel to 70mm with ~25% medium to fine grain sand and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
445	3965							
450	3960	SC	**Clayey Sand with Gravel (450 - 451)** Dry, very dense, no odor. Primarily medium to fine sand with ~15% gravel to 20 mm and ~30% silt and clay.The gravel is subangular to subround and the sand is angular to subangular. The fines are nonplastic, and do not react to HCl.					
		SC	**Clayey Sand with Gravel (451 - 453)** Dry, very dense, no odor. Primarily medium to fine sand with ~25% gravel to 40 mm and ~30% silt and					

BORING LOG

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Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
		CL	clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SC	**Sandy Lean Clay (453 - 454)** Dry, very dense, no odor. Primarily silt and clay with ~40% medium to fine sand and ~5% gravel to 15 mm. The sand and gravel are subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl.					
455	3955		**Clayey Sand (454 - 457)** Dry, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 30 mm and ~35% silt and clay.The gravel is subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
			(457 - 461) No Recovery					
460	3950							
		CL	**Sandy Lean Clay (461 - 466)** Dry, very dense, no odor. Primarily silt and clay with ~35% medium to fine sand and ~5% gravel to 20 mm. The sand and gravel are subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl. 461.5 - 462 feet is a large chunk of what looks like highly weathered granite w/ high feldspar.					
465	3945							
			(466 - 470) No Recovery					
470	3940							
		SC	**Clayey Sand (470 - 476)** Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 15mm and ~35% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic to low plasticity and toughness, and do not react to HCl. Starting to see					

BORING LOG

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Soil Boring: ☐ Monitoring Well: ☒ Piezometer: ☐ **Boring/Well Number:** B/W-29D

Depth (ft)	Elevation (ft)	USCS Group Symbol	Material Description	Sample Name	Sample Location	Lithology	Well Construction	Remarks
			larger rocks in core with large gravel size.					
475	3935	SC	**Clayey Sand (476 - 480)** Dry, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 10 mm and ~35% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
480	3930	GC	**Clayey Gravel with Sand (480 - 481)** Dry, very dense, no odor. Primarily gravel to 50 mm with ~35% medium to fine grain sand and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
		SC	**Clayey Sand (481 - 483)** Dry, very dense, no odor. Primarily medium to fine sand with ~5% gravel to 15mm and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
485	3925	SC	**Clayey Sand (483 - 490)** Dry, very dense, no odor. Primarily medium to fine sand with ~10% gravel to 20 mm and ~30% silt and clay. The sand and gravel are subangular to subrounded. The fines are nonplastic, and do not react to HCl.					
490	3920		Bottom of Borehole at 490 feet below ground surface.					